

## FACT SHEET

DATE: December 23, 2013  
FACILITY: Lawrence Wastewater Treatment Plant  
KANSAS PERMIT No.: M-KS31-IO01  
FEDERAL PERMIT No.: KS0036188  
LOCATION: NW¼, Section 32, Township 12S, Range 20E,  
Douglas County, Kansas  
Latitude: 38.96813      Longitude: -95.22042

PROPOSED ACTION: The proposed action consists of re-issuance of an existing Kansas/NPDES Water Pollution Control permit for an existing wastewater treatment facility.

EXISTING PERMIT: The existing permit was issued for a design flow of 12.5 MGD and included technology based effluent limits for carbonaceous biochemical oxygen demand, total suspended solids, pH, and water quality based limits for E.coli, total residual chlorine, and whole effluent Toxicity testing (WET). The ammonia limits were based upon an allocation of the total ammonia allowance for the city of Lawrence and Farmland Industries-Lawrence as calculated from the Kansas Surface Water Quality (KSWQ) ammonia criteria for the receiving stream. Monitoring for dissolved oxygen, nutrients (total phosphorus and total nitrogen), temperature and daily flow was required.

FACILITY DESCRIPTION: The existing facility is a mechanical treatment plant consisting of an aerated grit removal, primary clarification, complete mix activated sludge basins, final clarification, Acti-flo ballasted flocculation with clarification and disinfection of effluent via chlorination/dechlorination. The facility receives domestic wastewater from residential and commercial areas and industrial wastewater from local manufacturers. Sludge is digested in anaerobic and aerobic digesters and dewatered with a belt filter press prior to land application. In addition, effluent from a public water supply lime slurry lagoon is routed to the head of the wastewater treatment plant.

RECEIVING STREAM: The Lawrence wastewater treatment plant discharges to the Kansas River HUC 10270104 (Segment 21). Pursuant to the Kansas Surface Water Quality Standards K.A.R 28-16-28 (b-g), the first classified stream is the Kansas River. The Kansas River (Segment 21) is designated for special aquatic life use, domestic water supply, food procurement use, groundwater recharge, industrial water supply, livestock watering use, irrigation use and primary "B" recreation.

PROPOSED LIMITS: The proposed permit is based upon an average discharge flow of 12.5 MGD to the Kansas River. The permit retains the existing technology based effluent limits for carbonaceous biochemical oxygen demand, total suspended solids and pH. Water quality based limits are required for E.coli, total residual chlorine, and whole effluent toxicity testing (WET). The ammonia limits in the previous permit were based upon an allocation of the total ammonia allowance for the city of Lawrence and Farmland Industries-Lawrence. Farmland Industries is no longer in operation, and while current water quality based ammonia limit calculations would allow higher concentrations of ammonia to be released by the City, anti-backsliding provisions require the more stringent previous ammonia limits to be maintained. The city of Lawrence currently meets these ammonia limits. A Priority Pollutant Scan is required once in the five year period of the permit. Monitoring will continue to be required for dissolved oxygen (as a minimum required concentration) and daily flow.

In keeping with the Kansas Nutrient Management Plan, the permittee will be encouraged in the new permit to attain the goals of reducing nutrients to a goal of 10.0 mg/l for total nitrogen and 1.0 mg/l for total phosphorus or a goal of 8.0 mg/l for total nitrogen and 1.5 mg/l for total phosphorus as annual average concentrations.

Previous sample results provided by the permittee show there is No Reasonable Potential for temperature to have an adverse impact on the receiving stream, therefore monitoring for temperature will no longer be required. A dye study previously conducted at the Lawrence Wastewater treatment plant showed the mixing zone was more than 25%. Pursuant to the KSWQ regulations, a 25% mixing zone will be used in the calculations.

The basis of the effluent limits and monitoring applied in this NPDES permit are as follows:

<u>Parameter</u>	<u>Basis</u>
Biochemical Oxygen Demand	EPA Secondary Treatment Regulation
Suspended Solids	EPA Secondary Treatment Regulation
Ammonia	KSWQS / Anti-degradation
E. coli	KS Surface Water Quality Standards
Nutrients	Kansas Nutrient Reduction Plan
pH	EPA Secondary Treatment Regulation
Total Residual Chlorine	KS Surface Water Quality Standards

303(d) and TMDL LIST: The Kansas Water Quality Limited Segments 303(d) List shows the receiving stream the Kansas River HUC 10270104 (Segment 21) is impaired by total phosphorus, polychlorinated biphenyls (PCBs) and total suspended solids. Total phosphorus has goals for the permittee to attain and total suspended solids has permit limits. PCBs monitoring is not being required, as PCBs are not reasonably expected to be present in domestic wastewater. A TMDL has been written for biological impairment and E.coli bacteria. The draft permit addresses these impairments via limits for E. coli and operating practices for the biological impairments.

#### SUPPLEMENTAL INFORMATION:

The draft permit also contains a Supplemental Information section which describes the City's *Wastewater Facility Master Plan 2* ("Plan") looking at future wastewater needs, prioritizing the needs, and projecting the cost for funding the needed system-wide improvements. The plan is in response to EPA's June 5, 2012 published *Integrated Municipal Stormwater and Wastewater Planning Approach Framework* ("Framework"). The stated purpose of the Framework is to "*assist municipalities on their critical paths to achieving the human health and water quality objectives of the Clean Water Act by identifying efficiencies in implementing requirements that arise from distinct wastewater and stormwater programs, including how to best prioritize capital investments.*"

The Lawrence Plan contains all components required in the Framework and was adopted as the initial Integrated Plan and the core document for future modifications. The Kansas Department of Health and Environment (KDHE) technical and legal staff have reviewed and approved the Plan. KDHE and the City have entered into a Memorandum of Understanding (MOU) to acknowledge and agree upon the Plan and schedule. Administration of the Plan will be pursuant to the terms of the MOU.

SLUDGE: The sludge produced at this facility is land applied. The facility disposes sludge in compliance with the 40 CFR Part 503 Sludge Regulations requirements.

CERTIFIED OPERATOR: The facility employs multiple operators with the correct level of certification (Class IV) for this size of treatment facility.

Prepared By: Frank R. Weinhold  
Date: December 23, 2013

